FIREFIGHTER II MOD A
Portable Fire Extinguishers

2-5 PORTABLE FIRE EXTINQUISHERS

- **2-5.1** Identify the classification and types of fire by symbols, pictures, and color-coding as they relate to portable extinguishers. (*3-3.15*)
- **2-5.2** Identify the portable fire extinguisher rating system. (*3-3.15*)
- **2-5.3** Identify the appropriate extinguishers and the application procedures for the various classes of fires when given a selection of extinguishers commonly carried on fire apparatus. (*3-3.15*)
- **2-5.4** Identify the operation of all commonly available fire extinguishers and agents. (*3-3.15*)
- **2-5.5** Identify common defects found during a visual inspection of fire extinguishers. (*3-3.15*)
- **2-5.6** **Demonstrate extinguishing the following classes of fires using the appropriate portable fire extinguisher: (*3-3.15(b)*)**
  - **2-5.6.1 Class A**
  - **2-5.6.2 Class B**

REFERENCES:

IFSTA, Essentials, 4th ed., Chapter 5
Delmar, Firefighter's Handbook, copyright 2000,Chapter 8
Jones & Bartlett, Fundamentals of Fire Fighter Skills, Chapter 7

2-5 Portable Fire Extinguishers

I. Identify the classification and types of fire by symbols, pictures, and color coding as they relate to portable extinguishers. **2-5.2** (*3-3.15*)

A. Class, color, symbol, picture

1. Class A

a. Class: Ordinary combustibles

1) Examples: Wood, Paper, Clothing

b. Color: Green
c. Symbol: Triangle
d. Picture: Trash can and campfire

2. Class B

a. Class: Flammable liquids

1) Examples: Gasoline, Kerosene, Alcohol

b. Color: Red
c. Symbol: Square
d. Picture: Gasoline can

3. Class C

a. Class: Energized electrical equipment

1) Examples: Any type of electrical equipment that is energized

b. Color: Blue
c. Symbol: Circle
d. Picture: Plug and socket

4. Class D

    a. Class: Combustible metals

        1) Examples: Magnesium, Sodium Chloride, Lithium

    b. Color: Yellow
    c. Symbol: Star
    d. Picture: none

II. Identify the portable fire extinguisher rating system. **2-5.2** (*3-3.15*)

A. Class A

1. Rated 1-A through 40-A
2. 1-A requires 1¼ gallons of water.
3. Rating based on tests conducted by:

    a. Underwriters Laboratories Inc. (UL)
    b. Underwriters Laboratories of Canada (ULC)

4. Tests determine extinguishing capability

B. Class B

1. Rated 1-B through 640-B
2. Rating based on square foot area that a non-expert operator can extinguish.
3. Non-expert expected to extinguish 1 square foot for each numerical

C. Class C

1. No fire test conducted
2. Tested only for non conductivity
3. Receive only the letter rating

D. Class D

1. No numerical rating given

2. Considerations for rating

    a. Reaction between metal and agent
    b. Toxicity of agent
    c. Toxicity of the fumes produced and the products of combustion
    d. Time to allow metal to burn out without fire suppression efforts versus time to extinguish.

3. Cannot be given a multipurpose rating

III. Identify the appropriate extinguishers and the application procedures for the various classes of fires when given a selection of extinguishers commonly carried on apparatus. **2-4.3** (*3-3.15*)

A. Water (pump tank) Class A extinguisher

1. Sizes from 1½ to 5 gallons
2. Range: 30 to 40 feet
3. Discharge time: 45 seconds to 3 minutes
4. Agent discharged by pumping action of operator
5. Need freeze protection

B. Stored-pressure water extinguisher (air pressurized water) (APW) Class A extinguisher

1. Sizes from 1¼ to 2½ gallons
2. Range: 30 to 40 feet
3. Discharge time: 30 to 60 seconds
4. Agent discharged by compressed air stored in tank
5. Need freeze protection

C. Aqueous Film Forming Foam (AFFF) Class A and B extinguisher

1. Most 2½ gallons
2. Range: 20 to 25 feet
3. Discharge time: 50 seconds
4 Agent discharged by compressed air stored in tank
5. Need freeze protection

D. Dry Chemical (hand carried)

1. Ratings

    a. Ordinary: Class B/C
    b. Multipurpose: Class A, B and C

2. Sizes from 2½ to 30 pounds
3. Range: 5 to 20 feet
4. Discharge time: 10 to 25 seconds
5. Agent discharged by:

    a. Stored pressure
    b. Cartridge

6. Does not need freeze protection
7. Ordinary agents

    a. Sodium bicarbonate
    b. Potassium bicarbonate
    c. Ammonium phosphate
    d. Potassium chloride

8. Multi-purpose agents

    a. Mono-ammonium phosphate
    b. Barium sulfate

E. Carbon Dioxide (hand carried)

1. Class B/C extinguisher
2. Sizes: 2 to 20 pounds
3. Range: 3 to 6 feet
4. Discharge time: 8 to 30 seconds
5. Agent discharged by its own stored pressure
1. Avoid contact with skin
2. Large horn, no gauge

IV. Identify the operation of all commonly available fire extinguishers and agents. **2-5.4** (*3-3.15)*

A. Water (Pump Tank)

1. Determine if unit is full
2. Carry tank to fire
3. Unfold foot pad
4. Pump with one hand and direct stream with other hand
5. Sweep nozzle over entire area
6. Move in and complete extinguishment

B. Stored-Pressure Extinguishers – Water, Halon, Dry Chemical, Carbon Dioxide (CO_2)

1. Select appropriate extinguisher
2. Pull pin, breaking plastic or wire seal
3. Point the nozzle or horn in safe direction and discharge to ensure proper operation.
4. Carry extinguisher to fire
5. Aim nozzle or horn toward fire.
6. Squeeze the carrying handle
7. Sweep nozzle at base of fire.
8. Check that fire is out
9. Back away from fire area

C. Cartridge-operated Extinguishers – Dry Chemical, Dry Powder

1. Select appropriate extinguisher
2. Remove hose from stored position
3. Position to one side and depress activation plunger
4. Point the nozzle or horn to safe direction and discharge to ensure proper operation
5. Carry extinguisher to fire
6. Aim nozzle or horn toward fire.
7. Squeeze the discharge
8. Sweep nozzle starting near edge of fire.
9. Check that fire is out
10. Back away from fire area

V. Identify common defects found during a visual inspection of fire extinguishers**. 2-5.5** (*3-3.15*)

A. Corroded or damaged shells
B. Obstructed hoses, horn or nozzles
C. Illegible labels and instructions
D. Depleted or incorrect stored pressure
E. Unit not completely full
F. Damaged nozzles, hose and fittings
G. Tampering of lock pins and tamper seals
H. Inspection tag out of date
I. Leaking hoses, gaskets, nozzles and loose labels

VI. Demonstrate extinguishing the following classes of fires using the appropriate portable fire extinguisher: 2-5.6 (*3-3.15(b)*)

A. Class A 2-5.6.1

1. Class A Fire (Pump Tank)

    a. Checks to see if extinguisher is full
    b. Carries to fire from windward side, if possible
    c. Unfolds and steps on foot pad
    d. Pumps with one hand and directs stream with other hand
    e. Sweeps nozzle over entire area
    f. Moves in and completes extinguishment

B. Class B 2-5.6.2

2. Class B and C (Carbon Dioxide (CO_2)). For Class C fires, turn off energized electrical equipment

    a. Selects appropriate extinguisher
    b. Pulls pin
    c. Points nozzle in safe direction and discharges to ensure proper operation
    d. Carries extinguisher to fire from windward side, if possible.
    e. Aims nozzle toward fire
    f. Squeezes carrying handle
    g. Sweeps at base of fire
    h. Checks fire is out
    i. Backs away from fire